

EXPRESS MAIL RECEIPT NO.: EV 318623684 US

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:
Philippe Armangau, et al.

Serial No.: Unknown

Filed: June 25, 2003

For: Data Recovery with Internet Protocol
Replication With or Without Full Resync

Group Art Unit: Unknown

Examiner: Unknown

Atty. Dkt. No.: 10830.0096.NPUS00

INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313-1450

Sir:

Pursuant to the duty of disclosure under 37 C.F.R. § 1.56, it is respectfully requested that this Information Disclosure Statement be entered and the documents listed on attached Form PTO-1449 be considered by the Examiner and made of record. Copies of the listed documents required by 37 C.F.R. § 1.98(a)(2) are enclosed for the convenience of the Examiner.

In accordance with 37 C.F.R. §§ 1.97(g),(h), this Information Disclosure Statement is not to be construed as a representation that a search has been made, and is not to be construed to be an admission that the information cited is, or is considered to be, material to patentability as defined in 37 C.F.R. § 1.56(b).

The present application is assigned to EMC Corporation.

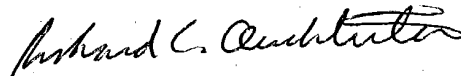
The subject matter of FIGS. 1-19 of the present application also appears in Suchitra Raman, et al., Ser. 10/147,751 filed May 16, 2002, entitled "Replication of Remote Copy Data for Internet Protocol (IP) Transmission," and assigned to EMC Corporation.

Armangau, et al.

The EMC replication technology was incorporated into an EMC product known as the "Celerra Replicator" and offered to the public beginning in September of 2002. See Ref. C7, EMC Celerra Replicator, EMC Corporation, Hopkinton, MA, Oct. 2002 (5 pages).

The subject matter of FIGS. 41 and 42 of the present application was incorporated into an EMC product known as "Smart Snap" and offered to the public beginning in September of 2002. Various aspects of EMC's snapshot copy technology are also disclosed in the following patent applications assigned to EMC Corporation: Philippe Armangau et al., Ser. 10/213,242 filed Aug. 6, 2002, entitled "Organization of Multiple Snapshot Copies in a Data Storage System;" Philippe Armangau et al., Ser. 10/213,335 filed Aug. 6, 2002 entitled "Instantaneous Restoration of a Production Copy from a Snapshot Copy in a Data Storage System;" and Philippe Armangau et al., Ser. 10/213,241 filed Aug. 6, 2002 entitled "Data Storage System Having Meta Bit Maps for Indicating Whether Data Blocks are Invalid in Snapshot Copies."

Respectfully submitted,



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Date: 25 June 2003

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| Form PTO-1449 (modified) | Atty. Docket No. 10830.0096.NPUS00 | Serial No. |
| List of Patents and Publications for Applicant's | Applicant Armangau, et al. | |
| INFORMATION DISCLOSURE STATEMENT | Filing Date: | Group: |
| (Use several sheets if necessary) | | |

U.S. Patent Documents

| Exam. Init. | Ref. Des. | Document Number | Date | Name | Class | Sub Class | Filing Date of App. |
|-------------|-----------|-----------------|------------|------------------|-------|-----------|---------------------|
| | A1 | 6,434,681 | 08/13/2002 | Armangau | 711 | 162 | 12/02/1999 |
| | A2 | 6,353,878 | 03/05/2002 | Dunham | 711 | 162 | 08/13/1998 |
| | A3 | 6,101,497 | 08/08/2000 | Ofek | 707 | 10 | 04/25/1997 |
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| | A6 | 5,974,563 | 10/26/1999 | Beeler, Jr. | 714 | 5 | 10/02/1998 |
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| | A8 | 5,893,140 | 04/06/1999 | Vahalia et al. | 711 | 118 | 11/13/1996 |
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| | A10 | 5,615,329 | 03/25/1997 | Kern et al. | 395 | 182.04 | 02/22/1994 |
| | A11 | 5,596,706 | 01/21/1997 | Shimazaki et al. | 395 | 182.04 | 08/10/1994 |
| | A12 | 5,434,994 | 07/18/1995 | Shaheen et al. | 395 | 500 | 05/23/1994 |

Foreign Patent Documents

| Exam. Init. | Ref. Des. | Document Number | Date | Country | Class | Sub Class | Translation Yes/No |
|-------------|-----------|-----------------|----------|---------|-------|-----------|--------------------|
| | B1 | 0 674 263 A1 | 09/27/95 | EP | G06F | 11/20 | |
| | B2 | 0 672 985 A1 | 09/20/95 | EP | G06F | 11/14 | |
| | B3 | | | | | | |

Other Art (Including Author, Title, Date Pertinent Pages, Etc.)

| Exam. Init. | Ref. Des. | Citation |
|-------------|-----------|---|
| ✓ | C1 | Uresh Vahalia, <u>UNIX Internals: The new frontiers</u> , Chapter 9, "File System Implementations," Prentice-Hall, Inc., Upper Saddle River, New Jersey, 1996, pp. 261-289. |

EXAMINER:

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EXAMINER: INITIAL IF REFERENCE CONSIDERED, WHETHER OR NOT CITATION IS IN CONFORMANCE WITH MPEP609; DRAW LINE THROUGH CITATION IF NOT IN CONFORMANCE AND NOT CONSIDERED. INCLUDE COPY OF THIS FORM WITH NEXT COMMUNICATION TO APPLICANT.

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| Form PTO-1449 (modified) | Atty. Docket No. 10830.0096.NPUS00 | Serial No. |
| List of Patents and Publications for Applicant's INFORMATION DISCLOSURE STATEMENT (Use several sheets if necessary) | Applicant Armangau, et al.. | |
| | Filing Date: | Group: |

Other Art (Including Author, Title, Date Pertinent Pages, Etc.)

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| ✓ | C2 | D.L. Burkes and R.K. Treiber, "Design Approaches for Real-Time Transaction Processing Remote Site Recovery," Digest of Papers in Spring COMPCON90, Feb. 26-March 2, 1990, <i>Thirty-Fifth IEEE Computer Society International Conference</i> , San Francisco, CA, pp. 568-572. |
| ✓ | C3 | "Network Data Management Protocol (NDMP)," http://www.ndmp.org/info/ ; NDMP White Paper, http://www.ndmp.org/info/technology/wp.html ; "Protocol Specification Summary, Document Version: 1.7.2S," http://www.ndmp.org/info/spec_summary.html ; "Legato Systems Embraces the NDMP Standard: Legato Networker Software to be NDMP Compliant in Q3," http://www-ftp.legata.com/News/Press/PR209.html ; published at least as early as 10/11/99, 17 pages. |
| ✓ | C4 | R. Stager and D. Hitz, Internet Draft filename " draft-stager-iquard-netapp-backup-05.txt ," <i>Network Data Management Protocol (NDMP)</i> , last update 10/12/99, pp. 1-73. |
| ✓ | C5 | Koop, P., "Replication at Work. (four companies use Oracle and Sybase replication servers to solve business problems)," DBMS, vol. 8, No. 3, p. 54(4), March 1995. |
| ✓ | C6 | Remote Mirroring Technical White Paper, Copyright 1994-2002 Sun Microsystems, published at least as early as May 17, 2002 at sun.com, 25 pages. |
| ✓ | C7 | EMC TechNote: Celerra Replicator, EMC Corporation, Hopkinton, MA, Oct. 2002 (5 pages). |
| ✓ | C8 | EMC TimeFinder Product Description Guide, EMC Corporation, Hopkinton, MA, 1998, pp. 1-31. |
| ✓ | C9 | Leveraging SnapView/IP in Oracle8i Environments with the CLARiiON IP4700 File Server, Engineering White Paper, EMC Corporation, Hopkinton, MA, Feb. 13, 2002, pp. 1-16. |
| ✓ | C10 | Using EMC CLARiiON FC4700 and SnapView with Oracle 8i, Engineering White Paper, EMC Corporation, Hopkinton, MA, March 4, 2002, pp. 1-22. |
| ✓ | C11 | Disaster Recovery Guidelines for using HP SureStore E XP256, Continuous Access XP with Oracle Databases Rev 1.03, Hewlett-Packard Company, Palo Alto, CA, May 2000, pp. 1-28. |
| ✓ | C12 | Enterprise Volume Manager and Oracle8 Best Practices, Compaq White Paper, Compaq Computer Corporation, Dec. 1999, pp. 1-11. |
| ✓ | C13 | VERITAS Database Edition for Oracle, Guidelines for Using Storage Checkpoint and Storage Rollback with Oracle Databases, Veritas Software Corporation, Mountain View, CA, August 2001, pp. 1-16. |
| ✓ | C14 | VERITAS Volume Replication and Oracle Databases, A Solutions White Paper, Veritas Software Corporation, Mountain View, CA, May 29, 2000, pp. 1-31. |

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| | Filing Date: | Group: |

Other Art (Including Author, Title, Date Pertinent Pages, Etc.)

| Exam. Init. | Ref. Des. | Citation |
|----------------|--------------|---|
| | C15 | Nabil Osorio and Bill Lee, Guidelines for Using Snapshot Storage Systems for Oracle Databases, Oracle Corporation, Oct. 2001, pp. 12. |

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